

PATENT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

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	)	Customer No.: 000043471
U.S. Serial No.: 09/811,702	)	
	)	Art Unit: 2614
Filed: March 19, 2001	)	
	)	Examiner: Annan Q. Shang
	)	

Title: DYNAMIC UPSTREAM AMPLIFIER POWER MANAGEMENT

**REPLY BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

In reply to the Examiner's Answer, Applicant respectfully requests reversal of the Final Rejection of Applicant's claims at least for the following reasons.

**I. Reply To The Examiner's Argument****A. The Rejection Is Based On Mis-Characterizations Of The References**

As explained in Applicant's Brief, neither McMullan Jr. nor Jung, taken alone or in combination, disclose or suggest causing an upstream amplifier of a cable modem to power on during transmission of upstream signals and power off when not transmitting said upstream signals, and to generate an amplifier switch signal after the amplifier control signal is generated, thereby stabilizing said upstream amplifier in the manner recited in each of independent claims 1, 5 and 9. Applicant explained in detail that McMullan merely discloses a method and apparatus for obtaining various statistics for remote terminals in a CATV system. Brief, pp. 7-8. Applicant also explained in detail that Jung merely discloses a pilot signal generating circuit which happens to contain an amplifier. Brief, pp. 8-9. The amplifier in the Jung's pilot signal generating circuit relied on in the rejection clearly is not the upstream amplifier involved in RF communications on the cable system. Brief, pp. 8-9. The Examiner simply ignores Applicant's discussion of the amplifier in Jung provided in Applicant's Brief. Instead, the Examiner propounds a fictional depiction of the pilot signal amplifier in Jung as relating to Applicant's claimed invention.

The Examiner asserts:

McMullan is silent to stabilizing the upstream amplifier. However, this deficiency is disclosed in Jung, which discloses in the same field of endeavor, a cable modem which includes a pilot signal generator 610 and an amplifier 612, where an amplifier control signal is generated to stabilize the upstream amplifier (col. 4, lines 19-60 and col. 5, lines 8-13).

Examiner's Answer, pg. 4.

Contrary to the Examiner's statements, Jung clearly does not discuss "stabilizing said upstream amplifier" as recited by Applicant's claims. Indeed if the pilot signal amplifier 612 is considered to be the upstream amplifier, then there is no discussion at all in Jung for stabilizing the pilot signal amplifier 612. Rather, Jung is concerned with stabilizing bidirectional amplifier 402, which is not turned off by Jung. Col. 4: 14-20 ("[T]o provide a stable upstream signal, an automatic gain control is performed by utilizing the existing bidirectional amplifiers (402), and therefore the headend (400) always receives a constant level signal"). The purpose of the Pilot Signal Generator 610 in Jung is to stabilize the communications from the modem in general. Put another way, the Pilot Signal Generator 610 allows calibration of the communication architecture of the modem, e.g. bidirectional amplifiers 402, to transmit all communications at a desired signal level. See, Jung, col. 4, 17:20.

Also contrary to the Examiner's implications, there is clearly no question that the pilot signal amplifier 612 does not qualify as "an upstream amplifier for receiving synchronized upstream communication signals from said MAC chip", as recited by the claims. The pilot signal amplifier 612 is not intended to amplify communications from the MAC chip, such is the purpose of amplifier 402, which is not disclosed to be turned off in Jung. Jung, Figs. 4 and 6; col. 4, 13:20 ("[T]o provide a stable upstream signal, an automatic gain control is performed by utilizing the existing bidirectional amplifiers (402), and therefore the headend (400) always receives a constant level signal"). There is no suggestion in Jung to provide synchronized communications from the MAC chip 606 to the pilot signal generator 612. Indeed, there is no suggestion that the pilot signal

amplifier 612 receives any communications at all from the MAC chip 606. See. Figs. 4 and 6, element 608.

Further contrary to the Examiner's implications, Jung also does not disclose "an amplifier switch signal **after** the amplifier control signal is generated." Applicant's claim

1. The Examiner simply ignores the claim limitations.

Ironically, while the Examiner interprets pilot signal amplifier 612 to apply to Applicant's claims, Jung clearly discloses to turn off the Pilot Signal Generating circuit 610 when data signals are to be transmitted and received to prevent interference. Jung, col. 4: 48-60. The Examiner is apparently calling Jung's pilot signal an "upstream data signal" as claimed, despite Jung's own distinction between data and the pilot signal. In short, the Examiner selectively interprets Jung to merely attempt to meet the claim limitations, e.g., the Examiner selects elements of different amplifiers to meet the one amplifier of Applicant's claims. Such, interpretation is simply a mis-characterization of the Jung reference and clearly improper.

Accordingly, as neither McMullan Jr. nor Jung, taken alone or in combination disclose all of the claimed limitations, the combination of McMullan Jr. and Jung does not render the claims unpatentable. In other words, the Examiner's conclusions of obviousness are not supported by factual evidence and should be withdrawn.

**B. There Is Clearly No Motivation To Modify McMullan With The Disclosure Of Jung**

The Examiner continues to ignore the actual disclosure of the references, particularly the Jung reference. As explained above, Jung does not disclose to turn off the bidirectional amplifier 402 which is actually involved in RF communications on the

cable plant. Hence, as Jung itself does not disclose to power on and off an upstream amplifier, the Examiner's conclusion that Jung would have motivated McMullan to do such is clearly unsupported.

The Examiner states in the Examiner's Answer:

Jung, discloses a cable modem which includes a pilot signal generator 610 and an amplifier 612, where an amplifier control signal is generated to stabilize the upstream amplifier and appropriate motivation was given, i.e., to allow the system to stabilize and allow the head end to receive a constant level signal.

Examiner's Answer, pg. 5.

As Jung does not even disclose to turn off or on the bidirectional amplifier 402, the purported motivation is at best nonsensical. To the extent that the Examiner is interpreting the pilot signal amplifier 612 as Applicant's "upstream amplifier", such amplifier is explicitly directed to be turn off during all data communications to prevent interference. Jung, col. 4: 48-60. Accordingly, under such interpretation, the proffered motivation is equally nonsensical because the operation of the pilot signal amplifier 612 only brings about the constant level signal by virtue of being one component of many in a specialized circuit component which is involved in a process of calibrating another amplifier which actually achieves such. In short, the actual affect, if any, that the pilot signal amplifier 612 itself has on achieving a level signal is so insignificant that it is not even described in Jung except to state that "amplifier (612) amplifies the signal output from the level controller (613)."

Finally, Jung only discloses to turn off the Pilot Signal Generating circuit 610 to prevent potential interference. Jung, col. 4: 52-57. The Examiner seems to implicitly relate the presence of a potential interference source to a lack of stability, and the removal of an interference source to the creation of stability. The stability achieved in Jung is

disclosed to be achieved by controlling the automatic gain control circuit associated with amplifier 402, not with turning off of the pilot signal amplifier 612. Jung, col. 4: 14-20, 39-46. The Examiner's equating of interference with stability is not disclosed or suggested by Jung, has no rational basis (e.g. nothing of record suggest that a signal in the presence of an interference source may not have a stable level), and at best is mere conjecture by the Examiner.

There is clearly no motivation to modify McMullan with Jung as done in the rejection.

Accordingly, Applicant respectfully requests the rejection to be withdrawn.

## **II. Conclusion**

Based on the foregoing, Applicant respectfully requests reversal of the rejections and allowance of the above claims. Should any issues arise that prevent early allowance of the above application, the examiner is invited contact the undersigned to resolve such issues.

To the extent an extension of time is needed for consideration of this response, Applicant hereby request such extension and, the Commissioner is hereby authorized to charge deposit account number 502117 for any fees associated therewith.

Respectfully submitted,

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